REMARKS

Status of the Claims

- Claims 12, 14, 18, 20, and 22 are pending in the Application.
- Claims 12-14, 18, 20, and 22-26 are rejected by Examiner.

Claim Rejections Pursuant to 35 U.S.C. §103

Claims 12-14, 18, 20, and 22-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable by U.S. Patent Publication No. 2002/0071448 to Cervello et al. (Cervello) in view of U.S. Application No. 60/387,434 to White et al. (White). Applicant respectfully traverses the rejection.

Cervello discusses collision avoidance in an IEEE802.11 contention free period (CFP) with overlapping Basic Service Sets. Cervello introduces a second network allocation vector (NAV) counter called an Overlapping Network Allocation Vector (ONAV) counter as an integral part of a scheme to reduce contention in the specific situation where there are overlapping basic service sets.

Applicant notes that the solution Cervello teaches to the contention in overlapping BSS environments concerns operation in PCF mode of a contention free period (CPF). As stated in paragraph 0019 of Cervello:

[0019] “Here, the main concern is the performance of the CFP under PCF in BSS.sub.2 in the existence of the overlapping BSS.sub.2. For example, the transmission from STA.sub.1,1 to AP.sub.1 during a CFP can collide with the transmission from STA.sub.2,1 to AP.sub.2. This kind of collision during the CFP can result in severe degradation of the effectiveness of the PCF in terms of the throughput, and it makes really difficult to support QoS using this polling-based PCF.”

To solve the contention concern, Cervello uses a novel RTS/CTS exchange between multiple stations during a contention free period as stated in paragraph 0021:

[0021] "It is also an object of the invention to provide a hybrid wireless MAC protocol for isochronous traffic support which uses a novel Ready To Send(RTS)/Clear To Send(CTS) exchange during a contention free period (CFP) in order to avoid contention from Stations (STAs) in overlapping BSSs."

In Cervello paragraph 0029, Figure 3 is proved as depicting the Cervello invention. According to paragraph 0017 of Cervello, which describes Figure 3, the Contention Free Period (CFP) uses the PCF mode and the Contention Period (CP) uses the DCF mode. Cervello paragraph 0017 states, in relevant part: [0017] "The PCF is implemented on top of the DCF, and controlled by a Point Coordinator (PC) which resides inside the access point (AP). An example of the PCF access is shown in FIG. 3 FIG. 3. The transmission time is divided into super-frames, where each super-frame is composed of a Contention Free Period (CFP) and a Contention Period (CP). During the CFP, the PCF is used for accessing the medium, while the DCF is used during the CP. ….. The AP polls each STA asking for pending frames to be transmitted. In case the STA has any, it will transmit a frame. If the AP receives no response from a polled STA after waiting for a point inter-frame space (PIFS) interval (FIG. 3), it will poll the next STA."

Thus, in addition, the AP in the CPF polls each station individually and obtains frame responses as well as acknowledgements. This is operation in the unicast mode as is understood by one of skill in the art when viewing Cervello Figure 3. In Cervello Figure 3, it can be seen that the AP transmits unicast messages to specific STAs and unicast responses from those STAs are received by the AP. Applicant notes that there is no discussion of DIFS intervals as in the pending claims of the present application.

Referring back to Figure 3, in the Cervello CFP, unicast messages are sent and received. An example of one exchange of unicast transmissions and immediate reception is given in Figure 5 of Cervello. Figure 5 also highlights the use of sequential RTS/CTS messages on a STA by STA basis. Cervello also introduces the concept of a overlapping network allocation vector (ONAV) that is

maintained for each STA in the system along with a separate network allocation vector (NAV). See Cervello paragraph 0041, last sentence.

These features; RTS/CTS messages in a unicast mode of operation to avoid collisions in a Contention Free Period, and the use of ONAV as well as a NAV in the STA is so critical to the operation of Cervello that the elements are included in Claim 1 of Cervello. These elements are necessary for Cervello to achieve its purpose and implementing collision avoidance in a multiple BSS environment where an AP uses sequential unicast messages .

White describes a system that transmits a broadcast message and then receives sequential responses via unicast replies from the wireless stations that received the broadcast transmission. (See White, paragraphs 0001 and 0020 describing broadcast messages followed by unicast responses). The advantage of such a system is that unicast retransmission, if required, need only be sent to the addresses for which an acknowledgement message was not received. White clearly defines this combination of a broadcast transmission from a broadcast node followed by multiple sequenced unicast return acknowledgement messages in different time slots from receiving nodes as a “Multicast-Broadcast”.

The present Office Action combines Cervello’s unicast RTS/CTS method of AP polling of STAs in sequential time during a contention free period with White’s broadcast transmission and unicast acknowledgements of White to attempt to reach the invention represented in the currently pending claims. Applicant respectfully submits that one of skill in the art would not be motivated to combine the references because their combination destroys the principle of operation of Cervello and renders it unsuitable for its intended purpose.

This commonsense rule against combining references that ruin a principle of operation or render one of the references unsuitable for its intended purpose is codified in MPEP §2143.01 sections V and VI which state:

V. THE PROPOSED MODIFICATION CANNOT RENDER THE PRIOR ART UNSATISFACTORY FOR ITS INTENDED PURPOSE

If proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification.

VI. THE PROPOSED MODIFICATION CANNOT CHANGE THE PRINCIPLE OF OPERATION OF A REFERENCE

If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious.

Applicant respectfully submits that the addition of White to the teachings of Cervello renders Cervello unsuitable for its intended purpose and changes the principle of operation of Cervello in violation of MPEP §2143.01 sections V and VI.

If the Cervello unicast RTS/CTS method of AP polling STAs in sequential time during a contention free period is modified by changing the unicast mode of Cervello with the broadcast mode of White, then Cervello cannot conduct and RTS/CTS exchanges of data and acknowledgement messages in a sequential manner. The addition of White mandates the use of Broadcast (not Cervello unicast) messages followed by only acknowledgement messages (not messages that include both STA data plus STA ACK messages as in Cervello). The AP broadcast transmission and unicast acknowledgements of White changes principle of operation of Cervello by forcing Cervello's unicast, single sequential STA data and ACK message operation into a broadcast message operation with only ACKs from STAs.

Also, the addition of White to Cervello frustrates the purpose of Cervello which is to ensure a conflict free contention free period by sequentially exchanging data and ACK frames with the STAs one at a time. The addition of White injuriously changes the single STA conflict free purpose of Cervello and forces it to be a broadcast method (instead of Cervello unicast) transmission to multiple STAs simultaneously (instead of Cervello sequentially) and exposes the

Cervello AP to multiple ACKS from multiple STAs (instead of the data frame plus single ACK exchange from a single STA as in Cervello).

Thus, Applicant respectfully submits that the addition of the teachings of White to the teachings of Cervello not only renders Cervello unsuitable for its intended purpose of a sequential unicast data plus ACK exchanges between an AP and a single STA in a contention free period but also impermissibly changes the principle of operation of Cervello by changing Cervello's unicast operation that includes return data and ACKS into a broadcast operation with only ACKS.

Considering the above arguments, Applicant respectfully submits that there is no motivation to combine the references of Cervello and White under MPEP §2143.01 Part V because the addition of White to Cervello frustrates the prupose of Cervello. Additionally, according to MPEP §2143.01 Part VI, the combination of Cervello and White is not sufficient to render the claims *prima facie* obvious because the addition of Whilte to Cervello changes the operation of Cervello. Accordingly, Applicant respectfully submit one of skill on the art would not combine the cited references under 35 USC §103.

Conclusion

Applicant respectfully submits that the pending claims patentably define over the cited art for the reasons stated herein. Applicant respectfully requests continued examination as well as reconsideration and withdrawal of all rejections. Reconsideration for a Notice of Allowance on the pending claims is also respectfully requested.

If there are any additional charges in connection with this requested for continued examination submittal, the Examiner is authorized to charge Deposit Account No. 07-0832 therefore.

Respectfully submitted,
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